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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Paul C. Gillette

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EXAMINER

WHITE, EVERETT NMN

ART UNIT

PAPER NUMBER

1623

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/822,926	Applicant(s) GILLETTE ET AL.	
	Examiner Everett White	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-96 is/are pending in the application.
- 4a) Of the above claim(s) 1-40, 50, 52-55 and 67-93 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-49, 51, 56-66 and 94-96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some.* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed July 18, 2007 has been received, entered and carefully considered. The amendment affects the instant application accordingly:
 - (A) Claims 41, 45, 56-58 and 63-66 have been amended;
 - (B) Comments regarding Office Action have been provided drawn to:
 - (I) 112, 2nd paragraph rejection, which has been withdrawn;
 - (II) 102(b) rejection, which has been withdrawn;
 - (III) 103(a) rejection, rendered moot by new ground of rejection over newly cited US Patent.
2. Claims 1-96 are pending in the case. Claims 1-40, 50, 52-55 and 67-93 are withdrawn from consideration as being directed to a non-elected invention and non-elected species.
3. The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

(New Grounds of Rejection)

4. Claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al (US Patent No. 3,085,087, already of record) in view of Dearborn (US Patent No. 3,375,245, newly cited).

Applicants amended the claims to recite a process for making a cellulose ether derivative comprising

(a) mixing a composition comprising a loose mass of comminuted raw cotton linter fibers that

(i) has a bulk density of at least 8 g/100 ml and

(ii) at least 50 wt% of the fibers in the loose mass passes through a US standard sieve size # 10 (2 mm opening) as a starting material with a base to form an activated cellulose mixture and,

(b) reacting the activated cellulose mixture with at least one etherifying agent to form a cellulose ether derivative product containing a cellulose ether derivative, wherein mixing

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power of the activated cellulose mixture is 5 % lower than the mixing power of the same process using comparably comminuted purified celluloses.

The Henry et al patent discloses in Example 1 a process for preparing carboxymethylcellulose that involve sodium hydroxide in water, a diluent, comminuted cellulose, monochloroacetic acid being combine to form a slurry to produce the cellulose product. The sodium hydroxide and monochloroacetic acid used in the example embrace the base, sodium hydroxide, etherifying agent, metal salts of α -halogenoalkanoates, and monochloroacetic acid disclosed in instant Claims 41, 44-46, 48 and 49. See column 4, lines 6-9, wherein the diluent is a water-miscible aliphatic alcohol selected from a group that includes ethanol, n-propanol, isopropanol, n-butanol, and tert-butanol, which embrace the organic diluents disclosed in instant Claims 94-96. The carboxymethyl cellulose produced in Example 1 embraces the carboxymethylcellulose disclosed in instant Claim 51. The Henry et al patent discloses in column 5, 2nd paragraph, that even-though, normally, the final product is the alkali salt of the carboxyalkyl ether, Henry et al discloses that the free acid form may be obtained by well known means, e.g., by treating the salt with a mineral acid or an ion exchange resin process. Henry et al also discloses that the product may be further process by purifying and dehydrating, which comprises washing the product with a nonsolvent such as methanol, neutralizing the free alkali with acetic acid, draining off the liquid, washing the product again with anhydrous methanol, and finally air-drying the cellulose ether product (see column 4, lines 38-66). The further processing of the product disclosed in the Henry et al patent embraces the subject matter of instant Claims 56 and 57. The Henry et al patent further teaches that the degree of substitution (D.S.) desired is determine by the amount of etherifying agent employed, which is generally about 0.01-3.0 parts of etherifying agent (based on monochloroacetic acid) per part of cellulose (see column 6, 2nd paragraph). The amount of etherifying agent disclosed in the Henry et al patent embraces at least part of the degree of substitution range disclosed in instant Claim 66.

The instantly claimed process for making a cellulose ether derivative differs from the process of the Henry et al patent by claiming that the starting material or starting cellulose is in the form of comminuted raw cotton linter fibers having a bulk density of at

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least 8 g/100 ml and a least 5 wt% of the fibers passes through a US standard sieve size # 10.

The Dearborn patent, which discloses methods of making carboxymethyl cellulose, suggests that it is well known in the art to use cotton linters having bulk density of 9.1 lbs./cu. ft. that has particle size which passes a 20 mesh screen, as the starting material for preparation of cellulose products (see Table 1 in column 2). The bulk density of 9.1 lbs./cu. ft. is greater than a bulk density of 8 g/ 100 ml and the particle size of 20 mesh screen passes through a US standard sieve size # 10, which meet the instantly claimed bulk density and particle size limitations.

One of ordinary skill in this art would be motivated to combine the teaching of the Henry et al patent with the teaching of the Dearborn patent since both references discloses preparation of carboxymethyl cellulose ethers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the form of the starting cellulose material used in the preparation of carboxymethyl cellulose ethers of the Henry et al patent with cotton linters of the cited bulk density and particle size in view of the recognition in the art, as evidenced by the Dearborn patent, that preparation of carboxymethyl cellulose ethers from cotton linter are effective in preparing cellulose products that are effective as an additive in drilling muds, as a thickener and dispensing agent in the manufacture of cosmetics and paints, as an additive in the food industry, and as a soil-suspending agent in soaps and detergents.

5. Applicant's arguments with respect to Claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 have been considered but are moot in view of the new ground(s) of rejection.

6. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Henry et al patent in view of the Dearborn patent as applied to Claims 41-46, 48, 49, 51, 56, 57, 66 and 94-96 above, and further in view of the Savage (US Patent No. 2,949,452, newly cited).

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Applicants claim a process for making a cellulose ether derivative wherein the base is selected from the group consisting of amines, quaternary ammonium hydroxides and mixture thereof.

The process for making a cellulose ether derivative described in the Henry et al patent in view of the Dearborn patent in the above rejection is incorporated into the current rejection.

The instantly claimed process for making a cellulose ether derivative differs from the Henry et al patent in view of the Dearborn patent by claiming amines for use as the base, which is not disclosed in the Henry et al and Dearborn patents.

However, the Savage patent suggests that the preparation of cellulose ethers using cotton linters as the starting material (see column 2, 3rd paragraph) and organic amines as the basic material (see column 2, line 26) is well known in the art.

One of ordinary skill in this art would be motivated to combine the teaching of the Henry et al patent in view of the Dearborn patent with the teaching of the Savage patent since the references disclose preparation of alkyl cellulose ethers that have the same utility such as use in drilling muds, thickeners for latexes, foods and other fields.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the base used in the preparation of carboxymethyl cellulose ethers of the Henry et al patent in view of the Dearborn patent with organic amines in view of the recognition in the art, as evidenced by the Savage patent, that organic amines used as bases in the preparation of cellulose ethers from cotton linter are effective in preparing cellulose products that are effective as an additive in drilling muds, as a thickener for latexes, and as an additive in the food industry.

7. Applicant's arguments with respect to Claim 47 have been considered but are moot in view of the new ground(s) of rejection.

8. Claims 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Henry et al patent in view of the Dearborn patent as applied to Claims 41-46, 48, 49, 51, 56, 57, 66 and 94-96 above, and further in view of Newbury et al (US Patent No. 6,069,355, already of record).

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Applicants claim a process for making an ether derivative, wherein the process further comprises the viscosity of the starting material or cellulose ether derivative being reduced by chemical, mechanical, irradiation and enzymatic means.

The process for making an ether derivative described in the Henry et al patent in view of the Dearborn patent in the above rejection is incorporated into the current rejection.

The instantly claimed process for making an ether derivative differs from the Henry et al patent in view of the Dearborn patent by claiming a process that involve the viscosity of the starting material or cellulose ether derivative being reduced by chemical, mechanical, irradiation and enzymatic means.

The Newbury et al patent shows that the viscosity of cellulose raw material being reduce by irradiation, chemical treatment or enzymatic treatment is known in the art (see column 2, last line to column 3, line 4).

One of ordinary skill in this art would be motivated to combine the teachings of the Henry et al patent in view of the Dearborn patent with the teachings of the Newbury et al patent since the documents disclose procedures for processing cellulose material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to initially reduced the viscosity of the cellulose material as suggested in the Newbury et al patent before mixing the cellulose in a slurry for the preparation of an ether derivative in view of the recognition in the art, as evidenced by the Henry et al patent in view of the Dearborn patent, cellulose material of low viscosity can more thoroughly be mixed in a slurry which increases the quality of the final product.

9. Applicant's arguments with respect to Claims 58-62 have been considered but are moot in view of the new ground(s) of rejection.

Summary

10. Claims 41-49, 51, 56-66 and 94-96 are rejected; Claims 50, 52-55 and 67-93 are withdrawn from consideration as being readable upon non-elected species. Claims 1-40 are withdrawn from consideration as being drawn to non-elected inventions.

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Examiner's Telephone Number, Fax Number, and Other Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-066127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



E. White



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